

REMARKS

In the Office Action, claims 1-36 and 38-58 were pending. Claims 1-36 and 38-58 were rejected. Rather than claims 1-36 and 38-58, claims 4-36 and 38-58 should have been pending. In an Office Action mailed on November 6, 2000, claims 1-3 and 37 were withdrawn from consideration.

Claims 4, 5, 7, 9, 11, 13, 16, 20, 21, 24, 30 and 34 have been amended. Claims 6, 8, 10, 12, 14, 15, 17-19, 22, 23, 25-29, 31-33, 38-58 have been cancelled and are no longer at issue. And new claims 59-62 have been added.

The proposed amendments and new claims do not contain new matter. The subject matter of the claim amendments and new claims can be found at page 3, line 19; page 5, line 25; and page 5, line 31, as well as other places in the originally filed application and in the originally filed claims. Applicants respectfully request admission of the amended and new claims.

I. Claim Rejections

A. Rejection of Claims under 35 U.S.C. § 112, first paragraph

In the Office Action at page 2, claims 15, 17, 21, 23, 24, 25, 31, 32, 51-54 and 56 were rejected under 35 U.S.C. § 112, first paragraph. Specifically, the Examiner stated the following: (1) at claim 15, line 6, there is no antecedent basis for "second dielectric films"; (2) at claim 17, last line, there is a question about which dielectric layer is being referred to; (3) at claim 21, lines 8-13, there is no antecedent basis for "third dielectric film of the third dielectric layer"; (4) at claim 23, line 2, there is no antecedent basis for "third dielectric film"; (5) at claim 24, next to last line, there is no antecedent basis for "first zinc stannate layer"; (6) at claim 25, lines 18-30, the phrase after "optionally" is confusing; (7) at claim 31, lines 26-36, the phrase after "optionally" is confusing; (8) while claim 31 states that the first dielectric film and second dielectric film of the second dielectric layer are different, claim 32 recites that the first dielectric film of the second dielectric layer and the second dielectric film of the second and third dielectric layer are the same. This is

contradictory; (9) claims 51-54 are confusing; (10) in claim 56, there is no antecedent basis for "the zinc oxide, tin oxide film".

Claims 21 and 24 have been amended to overcome each of the rejections listed above. As a result, Applicants respectfully request the withdrawal of the rejection of claims 21 and 24 under 35 U.S.C. § 112, first paragraph.

B. Rejection under 35 U.S.C. § 102(b)

In the Office Action at page 3, claims 25, 28, 31 and 52-54 were rejected under 35 U.S.C. 102(b) as being anticipated by GB 2 311 540 ("Depauw"). The Examiner stated that Depauw teaches a coated sheet for use in a laminated assembly including a transparent substrate carrying two metal layers formed of silver and three layers of a transparent dielectric material. The Examiner further stated that the dielectric material includes oxides such as tin oxide, zinc oxide, silicon nitride or a mixture thereof, or a complex of zinc stannate, and the combination of tin oxide and zinc oxide is advantageous and that multiple films are used in each dielectric layer.

Via amendments, claims 25, 28, 31 and 52-54 have been cancelled and are no longer at issue. Therefore, the rejection is moot.

C. Rejection under 35 U.S.C. § 103(a)

In the Office Action, claims 4-24, 26, 27, 29, 30, 32-36 and 38-58 are rejected under 35 U.S.C. §103(a) as being unpatentable over Depauw in view of U.S. Patent No. 4,610,771 ("Gillery"). The Examiner stated that Depauw does not teach specific contents of the zinc oxide/tin oxide layers. The Examiner further stated that Gillery teaches films of metal alloy oxides for use in antireflection films in combination with metallic films such as silver and that Gillery teaches that the film may be zinc and tin oxide, wherein the zinc is present at about 10-90% and the remainder is tin. In the opinion of the Examiner, it would have been obvious to one of ordinary skill in the art at the time of the invention to use a zinc and tin oxide layer having the composition taught by Gillery in the coating of Depauw to provide a coating with improved transmittance. Applicants respectfully traverse the rejection.

1. The Present Invention

The present invention as recited in amended claim 4 is a coated article comprising: A) a substrate; B) one or more dielectric layers sputter deposited over the substrate, the first dielectric layer, comprising: i) first dielectric film comprising at least one film of: zinc oxide, silicon oxide, tin oxide, silicon nitride, silicon oxynitrate, or of an oxide of an alloy of zinc and tin having zinc in a weight percent range of equal to or greater than 10 and equal to or less than 90, and tin in the weight percent range of equal to or less than 90 and equal to or greater than 10, and ii) a second dielectric film deposited over the first dielectric film, the second dielectric film comprising at least one: zinc oxide, tin oxide film wherein, the zinc oxide, tin oxide film has tin in the weight percent range of greater than 0 and less than 10 and the majority of the balance zinc, and C) one or more infrared reflective layers deposited on at least one of the dielectric layers.

2. Depauw

Depauw discloses a coated sheet for use in a laminated assembly. The coated sheet is made of a transparent substrate coated with two metal layers and three layers of a transparent dielectric non-absorbent material. The layers are arranged in the following manner: substrate/non-absorbent 1/metal 1/non-absorbent 2/metal 2/non-absorbent 3.

3. Gillery

Gillery discloses a metal alloy oxide film and sputtering method for its production as well as a high transmittance, low emissivity coated product employing the metal alloy oxide film as an antireflective film in combination with a metallic film such as silver.

4. Traversal of the Rejection

For a proper rejection under 35 U.S.C. § 103, the PTO must satisfy three requirements. First, the prior art relied upon, coupled with the knowledge generally available in the art at the time of the invention, must contain some suggestion or incentive that would have motivated the skilled artisan to modify a reference or to combine references. See In re Fine, 837

F.2d 1071, 1074, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988). Second, the proposed modification of the prior art must have had a reasonable expectation of success, determined from the vantage point of the skilled artisan at the time the invention was made. See Amgen, Inc., 927 F.2d 1200, 1209, 18 U.S.P.Q.2d 1016, 1023 (Fed Cir. 1991). Lastly, the prior art reference or combination of references must teach or suggest all the limitations of the claims. See In re Wilson, 424 F.2d 1382, 1385, 165 U.S.P.Q. 494, 496 (C.C.P.A. 1970).

The present invention as recited in amended claim 4 is a coated article having a dielectric layer including a second dielectric film comprising at least a: zinc oxide, tin oxide film, the zinc oxide, tin oxide film has tin in the weight percent range of greater than 0 and less than 10 and the majority of the balance zinc. As the Examiner stated in the Office Action, Depauw does not teach or suggest specific contents of the zinc oxide/tin oxide layers. Consequently, Depauw does not teach or suggest the specific zinc oxide, tin oxide film recited in amended claim 4 of the present invention.

Gillery teaches specific alloys of tin and zinc, but not the one recited in amended claim 4 of the present invention. Gillery teaches alloys of zinc and tin in proportions of 10 to 90 percent zinc and 90 to 10 percent tin. In the present invention, the coated article has a dielectric layer including a second dielectric film comprised of: a zinc oxide, tin oxide film that is less than 10 weight percent tin oxide and the majority of the balance zinc oxide.

Depauw, considered alone or in combination with Gillery, does not teach or disclose, either explicitly or implicitly, a coated article having a dielectric layer including a second dielectric film comprising zinc oxide, tin oxide film that is less than 10 weight percent tin oxide and the majority of the balance zinc oxide as recited in amended claim 4. More specifically, the dielectric layer disclosed in Gillery is at least 10 weight percent tin oxide. As a result, amended claim 4 is patentably distinguishable over the references of record. Applicants respectfully request the withdrawal of the rejection of claim 4 under 35 U.S.C. § 103(a) as being unpatentable over Depauw in view of Gillery.

Claims 5, 7, 9, 11, 13, 16, 20, 21, 24, 30, and 34-36 directly or indirectly depend from claim 4 and recite the present invention in varying scope. Applicants have discussed above how claim 4 is patentably distinguishable over the references of record and claims 5, 7, 9, 11, 13, 16, 20, 21, 24, 30, and 34-36 are similarly distinguishable. There is nothing in Depauw in view of Guiselin that teaches or suggests the invention as recited in claim 4, as further limited by claims 5, 7, 9, 11, 13, 16, 20, 21, 24, 30, and 34-36. Applicants respectfully request the withdrawal of the rejection of claims 5, 7, 9, 11, 13, 16, 20, 21, 24, 30, and 34-36 under 35 U.S.C. § 103(a) as being unpatentable over Depauw in view of Gillery.

II. The New Claims

New claims 59-62 directly depend from claim 4 and recite the present invention in varying scope. Applicants have discussed above how claim 4 is patentably distinguishable over the references of record and claims 59-62 are similarly distinguishable. There is nothing in Depauw in view of Gillery that teaches or suggests the invention as recited in claim 4, as further limited by claims 59-62. As a result, Applicants respectfully request that claims 59-62 be allowed.

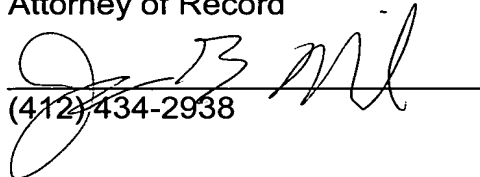
III. Conclusion

In light of the amendments and remarks presented in this correspondence, Applicants respectfully request the withdrawal of the following rejections: the rejection of claims 15, 17, 21, 23, 24, 25, 31, 32, 51-54 and 56 under 35 U.S.C. § 112, first paragraph; the rejection of claims 25, 28, 31 and 52-54 under 35 U.S.C. 102(b) as being anticipated by Depauw; the rejection of claims 4-24, 26, 27, 29, 30, 32-36 and 38-58 under 35 U.S.C. §103(a) as being unpatentable over Depauw in view Gillery; and allowance of claims 4, 5, 7, 9, 11, 13, 16, 20, 21, 24, 30, and 34-36 and new claims 59-62.

If there are any additional issues, the Examiner is requested to
contact Applicants' attorney at the telephone number provided below.

Respectfully submitted,

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